

### **Remarks**

The present Amendment is made in response to the final Office Action dated August 22, 2007, and identified as Paper No. 20060730. Claims 1-48 are pending in the application.

In the Action, the Examiner rejected claims 1, 12, 16, 18, 20, 30, 34, and 45 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,873,875 to Altshuler (*Altshuler*). Claims 2-7, 9-11, 21-25, 27-29, 31, 35-40, 42-44, and 46 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Altshuler* in view of U.S. Patent No. 5,040,539 to Schmitt, et al. (*Schmitt*). Claims 8, 26, and 41 were rejected under 35 U.S.C. 103(a) in further view of U.S. Publication No. 2001/0018554 to Yamashita et al. (*Yamashita*). Additionally, claims 14, 32, and 47 were rejected under 35 U.S.C. 103(a) as unpatentable over *Altshuler* in view of U.S. Patent No. 6,436,127 to Anderson et al. (*Anderson*). Claims 15, 33, and 48 are rejected under 35 U.S.C. 103(a) as unpatentable over *Altshuler* in view of U.S. Publication No. US 2002/0026127 to Balbierz et al. (*Balbierz*). Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Altshuler* in view of U.S. Patent No. 5,109,859 to Jenkins (*Jenkins*), and claim 19 is rejected under 35 U.S.C. 103(a) as unpatentable over *Altshuler* in view of U.S. Patent No. 5,202,939 to Belleville et al. (*Belleville*).

#### **I. Rejections in view of *Altshuler* under 35 U.S.C. § 102**

According to the Examiner, *Altshuler* discloses all of the elements recited in claim 1. However, the Examiner did not specifically identify where *Altshuler* disclosed the claimed “processing means for processing said detected shock waves induced by said transmitted light of said first frequency to measure said erythema in said tooth.” Instead, the Examiner simply noted that *Altshuler* disclosed a detector for detecting shock waves induced by laser light to detect the status of tissue.

This general reference to the cited art is not sufficient to support a rejection under 35 U.S.C. § 102, and a closer look at the reference reveals that it does not disclose all of the limitations recited in the broadest claims of the present application. MPEP 2131 (“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)). Moreover, the Examiner relied only on vague analogy to the reference, leading to the conclusion that such limitations are in fact absent from *Altshuler*. A closer look at *Altshuler* reveals that the reference fails to disclose each and every limitation of the claimed invention. More specifically, the structure identified by the Examiner in *Altshuler* does not disclose the claimed processing means that measure the erythema in a tooth.

The present invention calls for the use of light to induce shock waves in a tooth, and then the analysis of the shock waves by processing means to determine whether the tooth is suffering from erythema. *Altshuler* discloses nothing along these lines. *Altshuler* does not disclose processing the information obtained from shock waves induced by laser light to determine the presence of erythema. Instead, *Altshuler* discloses processing the induced shock waves ***only for the purposes of determining laser-based necrosis of the tissue targeted for destruction***. Col. 6, lines 1-24. The detectors disclosed in *Altshuler* are thus used exclusively for providing feedback for the laser destruction process. *See also* col. 3, lines 8-17. Accordingly, *Altshuler* does not disclose the claimed “processing means for processing said detected shock waves induced by said transmitted light of said first frequency to measure said erythema in said tooth.”

Along these lines, the Examiner stated that detecting the “status” of the tooth is the same as diagnosing the tissue. The Examiner failed to provide any evidentiary basis for this

conclusion, which is not supported by the disclosure in *Altshuler* or any other cited reference. The “status” of *Altshuler* relates only to whether the tissue has been destroyed by the laser system, and has nothing to do with the presence of disease in the tissue, as specifically required by the claims. While the Examiner appears to have disagreed about the meaning of “status,” he failed to point to any evidence in *Altshuler* that would suggest otherwise. Indeed, *Altshuler* is ***completely silent as to the measurement of any diseases at all***, and thus cannot possibly disclose the claimed processing means which measure the erythema in the tooth.

The Examiner’s reasoning that *Altshuler* is “capable of detecting erythema” also has no basis in the reference, which fails to disclose any processing means at all, and certainly no processing means for measuring a specific dental disease. In fact, *Altshuler* discloses that the lasers are switched off if the detectors exceed a certain threshold. Col. 6., lines 1-24. There is simply no way that the system of *Altshuler* can anticipate claims requiring processing means for measuring a specific dental disease in light of the fact that the reference fails to disclose the existence of any processing means or any dental disease, and certainly does not disclose any processing means specifically for measuring erythema.

## **II. Rejections in view of *Altshuler* under 35 U.S.C. § 103**

*Altshuler* is directed exclusively toward a system for destroying dental tissue that included a feedback apparatus comprising detectors that switch the laser source off when detection thresholds are met. Col. 1, lines 1-24. The Examiner has proposed a host of modification to the surgical system of *Altshuler* that would change its principle of operation from a surgical system into a dental disease detection system. This profound change in the primary and only purpose for the system disclosed in *Altshuler* cannot be used as the basis for an obviousness rejection under 35 U.S.C. § 103. See MPEP 2143.01(IV)(“ If the proposed

modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious).

The Examiner disagreed that modifying *Altshuler* would change its principle purpose because *Altshuler* discloses that the status of the tissue may be “represented.” In the portion of the specification identified by the Examiner, *Altshuler* discloses that the detector may be a spectral analyzer or an acoustic detector. Thus, *Altshuler* uses the term “represented” to mean that the detector can be one of those things. This portion of the specification, and the use of the word “represented,” relate to what things can be a detector and have nothing to do with whether the system may be modified to do things, such as measure tooth diseases, that have nothing to do with the sole purpose of the system – to destroy dental tissue and detect necrosis of the destroyed tissue. In other words, “represented” means the same thing as “comprises” or “constitutes.”

The specification of *Altshuler* also fails to support the Examiner’s conclusion that *Altshuler* can be used to detect different states of tissue prior to necrosis. In fact, the only “status” disclosed in *Altshuler* is whether the tissue has suffered necrosis. It is therefore improper for the Examiner to propose wholesale changes to *Altshuler* to try to convert the system to do something completely different than what it is designed to do. Thus, the Examiner’s proposed modification to change the tissue destruction system into a tissue diagnosis system that is capable of measuring erythema is factually unsupported by the cited references and counter to MPEP 2143.01(IV).+

### **III. Conclusion**

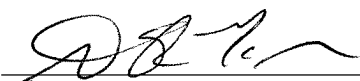
In view of the foregoing remarks, the Examiner’s reconsideration and allowance of the present application is believed to be in order. If the Examiner believes a phone conference with

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Applicant's attorney would expedite prosecution of this application, please contact the undersigned at (315) 218-8515.

Respectfully Submitted,

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By:   
George R. McGuire  
Reg. No. 36,603

BOND, SCHOENECK & KING, PLLC  
One Lincoln Center  
Syracuse NY 13202-1355  
Telephone: 315-218-8515  
Facsimile: 315-218-8100